



भारतीय रिज़र्व बैंक
RESERVE BANK OF INDIA

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Developmental Role of Reserve Bank of India in the Payment Systems

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Payment Systems Vision

- The establishment of safe, secure, sound and efficient payment and settlement system for the country (Triple S+E)
 - ◆ Safe- risk free/minimum risk
 - ◆ Security - confidence of the users in the system
 - ◆ Soundness – built on international standards and stand the test of time
 - ◆ Efficiency- in terms of cost and time



Different Types of Payment Systems in India

Broadly divided into two types

Paper based ...

MICR
MMBCS
INTERCITY
MANUAL

Electronic...

RTGS
ECS
EFT
NEFT
CENECS
CTS/NECS



Different Types of Payment Systems in India (contd.....)

Based on Settlement Method ...

Net Settlement

ECS (Credit)

ECS (Debit)

EFT

NEFT

CTS

Gross Settlement

RTGS

Based on Settlement Time ...

Deferred

ECS (Credit)

ECS (Debit)

EFT

NEFT

CTS

Real Time

RTGS



Developments in Payment and Settlement Systems

- **Uniform Regulations and Rules for Bankers Clearing Houses (URRBCH)**
 - Prior to 1986, there were no uniform regulations and rules governing the transaction of business in the clearing houses.
 - Each Clearing House had its own deviations from rules and regulations based on local conventions and convenience.
 - In 1986, Reserve Bank of India framed a set of guidelines known as the Uniform Regulations and Rules (URR) for the Bankers' Clearing Houses.
 - Today it forms the legal basis for the operations of clearing houses in India



Regulation of Clearing House...URRBCH

- **Clearing Houses are regulated by URRBCH-Uniform Regulation & Rules for Bankers Clearing House**
 - ◆ **Regulation-Membership criteria, Maintenance Charges etc.**
 - ◆ **Rules-timing of presentation/return, extension of clearing hours, permitting late returns**
- **Provides a framework for smooth and efficient settlement system**



Developments in Payment and Settlement Systems (contd..)

High Volume of instruments -MICR clearing

- ◆ The RBI introduced the system MICR based cheque clearing during late 80's for four metropolitan cities (Mumbai, New Delhi, Chennai and Kolkata).
- ◆ 17 new MICR centres were started in 2005-07
- ◆ Total no of Clg. Houses in the country – 1076
- ◆ Total no of MICR Centers – 59
- ◆ These Centers accounted for 84% and 87% respectively, of the total volume and value of cheque clearing
- ◆ RBI advised banks / Governments that all paper payment instruments should be in MICR format



- Low volume – Magnetic Media Based Clearing System (MMBCS)
 - ✦ MMBCS – banks provide presentation as well as return clearing data in a Floppy and using a software (MMBCS) statements are generated and settlement is done
- Manual Clearing centres are being automated using MMBCS
 - ✦ Helps to reduce the time required for arriving at settlement
 - ✦ 240 Clg. Houses have been identified
 - ✦ 150 Clg. Houses with more than 15 member Banks have been automated



- the RBI has also been constantly ensuring that the existing systems are upgraded / refined to increase their efficiency and to meet the requirements of customers
 - ◆ Imaging facility was added to MICR
- formulating Business Continuity Plan (BCP) to ensure that Clearing Services are unaffected in the event of Strike, operational difficulties etc.
- Designating alternate bank in the area to perform the activities of the bank managing the Clearing House
- As a part of Electronic Payment Systems, RBI introduced ECS, EFT, Cen ECS and NEFT

Electronic Clearing System



Is a low value high volume clearing system

Like the ACH of the USA

140 mio transactions in 2006-07: > 100% growth **Two Variants ...**

I. ECS Credit

- Credit Push
- One Debit – Multiple Credits – No Amount limits
- 64 Locations (incl. 15 RBI centres)
- All 15 RBI centres are interconnected
- Centralized ECS available at these 15 RBI Centres – single file submission - credit afforded at multiple locations
- Fund settlement in RBI books at 15 locations and through books of Clearing Bank at other locations
- Max 3 day cycle
- Secured through data encryption – plan is to cover all 15 locations through file upload on secured website.
- Being used for: Dividend payout, MF, IPO refund payouts, salary, pension, PO MIS, Supplier/Vendor payments and any recurring payment types

Electronic Clearing System



Another variant – NATIONAL ECS

NECS - Credit

- Credit Push
- One Debit – Multiple Credits
- To cover all ECS Locations
- Centralized ECS for National level – single file submission
- Processing of files and settlement Centralised at Mumbai
- T + 1 cycle
- File transfer through Secured File Transfer (SFT) facility in SFMS under NEFT system using digital signature.
- Eligibility: NEFT member , Banks who implemented CBS . The CBS branches in all ECS locations will be covered.
- Used for: Dividend payout, MF, IPO refund payouts, salary, pension, PO MIS, Supplier/Vendor payments and any recurring payment types

Electronic Clearing System



II. ECS Debit

- Debit Pull
- Multiple Debits - One Credit (as per customer mandate) — No Amount limits
- 64 Locations (incl. 15 RBI centres)
- Fund settlement in RBI books at 15 locations and through books of Clearing Bank at other locations
- Max 3 day cycle
- Secured through data encryption – plan is to cover all 15 locations through file upload on secured website.
- Being used for: Utility Payments, Mobile payments, school fees, club fees, EMI payouts, Insurance premiums, etc.



Electronic Funds Transfer System

- Inter Bank – Inter City
- One to One Funds Transfers
- Currently one cycle at 1400 hrs
- No Amount limits
- Works on T+1 basis
- At 15 RBI locations
- Banks may register for outward EFT
- Inward EFT is mandatory for all banks & all branches at the 15 locations
- Being used for: Customer Payments, Supplier / Vendor Payments, Card related Payments, etc.
- To be withdrawn by 31 Dec. 2007 – will be merged with NEFT

National Electronic Funds Transfer System



- Inter Bank – Inter City
- One to One Fund Transfers positioned for Retail type payments – I.e. low value & high volume – available at nominal charges
- Currently six cycles at 0930,1030, 1200, 1300,1500,1600 hrs
- No Amount limits - Works on T+0 / T+1 basis
- Processing centralized at Mumbai – Service centers of participating banks to interact only with RBI Mumbai – Funds settlement in RBI books through RTGS
- Interaction is between Service Center & RBI – it is bank's responsibility to have flow between originating / destination branch and service center in place
- Akin to CHIPS in the USA
- Banks to register for NEFT - Eligibility criteria:
 - Should be RTGS member
 - Should have Structured Financial Messaging Systems (SFMS) – RDBMS Based application using digital PKI infrastructure on Indian Financial Network (INFINET)



National Electronic Funds Transfer System (contd.)

- More than 32500 branches of 77 banks currently participating and covering more than 1000 centers
- Rides on SFMS platform using PKI technology – messages flow with digital signatures – highest security standards fully compliant with IT Act 2000
- Routing of messages based on Indian Financial System Code (IFSC)
- Banks should use common IFSC for RTGS & NEFT
- Each branch to have unique IFSC
- File Upload, Transaction Query Search facilities have been built in.
- Banks attempting to put in place STP flow from their channels (internet) and centralised banking systems to NEFT
- Liquidity Saver – since settlement is on Net Deferred basis – leverage on the funds
- Way Forward:
 - Immediate Target: Cover all RTGS branches (33,500)
 - Future Plan: Reach out to 40,000 branches

Cheque Truncation System (CTS)



- Scanning of cheque to be done by Presenting / Collecting bank (choice left to the Banks) – either at Service branch or banks may outsource to Service Bureaus
- Only images to travel through CHI to the drawee bank – no physical movement of instruments
- Reduced chances for fraud due to increased use of banking channels – less manual intervention
- Time of settlement will be reduced drastically - efficiency enhancement
- Upcountry cheques will also be cleared on T+0 / T+1 basis
- Pilot to commence shortly in New Delhi Capital Region – all banks to support this
- B&W and Grey scale imaging to be used
- MICR code line & amount will be used by Clearing House for settlement of funds (in RBI books)
- Banks attempting for full STP including signature verifications
- Additional onus on Presenting / Collecting bank to ensure apparent tenor of the instrument.
- PKI & Digital signature used while sending images in data flow
- Image archive will be provided by RBI (Central Warehouse) for 8 years
- Presenting banks have to keep all the cheques received from customers and sent for clearing with it for 8 yrs even pertaining to other banks

Real Time Gross Settlement System



- High Value – Time Critical payments and Systemically Important Payments (Inter Bank, Securities, Forex settlements)
- Gross Settlement: banks to manage the increased liquidity pressure – facility for intra-day liquidity using RBI provided Intra Day Liquidity (IDL) (against Govt Securities)
- Separate RTGS settlement account: must be zero by EOD – balance swept at BOD from DAD, RBI account. Limits for individual banks fixed by RBI.
- Eliminate Systemic Risk due to failure of participants - Finality of the settlement is immediate
- Payments to be effected in real time to final beneficiary and may be applied by him – max window of 2 hours to return
- Window: 0900 hrs to 1530 hrs for customers and till 1700 hrs for inter bank on week days
- Interaction is between PI & RBI – it is bank's responsibility to have flow between originating / destination branch and PI in place (if centralized)



Real Time Gross Settlement System (contd.)

- Settlement pressure can be spread out throughout the day
- Currently 20,000 transactions per day – value approx. INR 2,000 billion
- Locations: more than 1000 centers through 33,500 branches of 99 banks
- Banks attempting to put in place STP flow from their channels (internet) and centralised banking systems
- Uses PKI technology – messages flow with digital signatures – highest security standards fully compliant with IT Act 2000
- Acknowledgements received – referenced using UTR across paying & receiving bank
- Routing of messages based on IFSC - Banks should use common IFSC for RTGS & NEFT - Each branch to have unique IFSC
- Akin to Fed Wire in the USA

RBI Initiatives



- Processing charges waived by RBI till Mar 31 2008 to encourage usage
- Banks to fix their service charges based on internal policies
- Final roadmap for RBI is to have only 2 electronic solutions:
 - RTGS: for high value and SIPS
 - NEFT: for retail, lower value, high volume payments
- Aim is to eliminate Systemic Risk and Settlement Risk involved in Net Settlement system.
- Banks should put in place strong STP solutions to offer better services for their customers and be able to resolve queries related to e-payments.
- Banks to offer such products through different channels – Internet banking, Host to Host, ATMs (in future), etc.
- Banks to structure their own innovative products on these electronic platforms.



RBI Initiatives (contd...)

- Enhancing usages of RTGS System
- Providing incentives and guidelines for reducing transaction cost for electronic payments
- Improving legal infrastructure for the payment systems
- Introducing nationwide payment system for retail payment
- Improving international remittance facility
- Facilitating newer channel of payments



Payment System Indicators in India

Annual Turnover

- Annual turnover in terms of value increased in the year 2006 - 07 by 37.5%
- Annual turnover in terms of ratio of GDP in 2006 - 07 – 10.3

Payment systems Indicators : Annual Turnover (SIPS)



	Volume (In millions)			Value (In billions)		
	2004-05	2005-06	2006-07	2004-05	2005-06	2007-08
Inter Bank Clg.	0.80	-	-	9914.36	-	-
High Value Clg.	13.07	15.92	18.73	46072.08	49814.28	50340.07
Govt. Sect. Clg.	0.18	0.15	0.16	26921.29	25529.60	35780.37
Forex Clg.	0.46	0.49	0.60	40424.35	52396.74	80230.78
RTGS	0.46	1.76	3.87	40661.84	115408.36	184811.55



Payment systems Indicators : Annual Turnover (Others)

	Volume (In millions)			Value (In billions)		
	2004-05	2005-06	2006-07	2004-05	2005-06	2007-08
MICR	927.57	1015.91	1128.65	37576.08	44929.43	54151.03
Non-MICR	225.39	254.92	223.17	11026.43	18547.63	16069.90
Electronic Clgs.	57.90	83.24	148.99	777.02	1065.98	1861.60



Thank You